## (19) World Intellectual Property Organization International Bureau

nauonai Burcau





(43) International Publication Date 18 August 2005 (18.08.2005)

PCT

(10) International Publication Number WO 2005/075932 A1

(51) International Patent Classification<sup>7</sup>: 33/00, 12/24, 12/74

F42B 12/34,

(21) International Application Number:

PCT/BR2004/000006

- (22) International Filing Date: 6 February 2004 (06.02.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

- (71) Applicant (for all designated States except US): COM-PANHIA BRASILEIRA DE CARTUCHOS [BR/BR]; Av. Humberto de Campos, 3220, Ribeirão Pires, CEP-09426-900, SP (BR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): MARTINI FILHO, Laudermiro; Av. Humberto de Campos, 3220, Ribeirão Pires, CEP-09426-900, SP.
- (74) Agent: CRUZEIRO/NEWMARC PATENTES E MAR-CAS LTDA.; Rua Itajobi, 79, Pacaembu, CEP-01246-010 São Paulo, SP (BR).

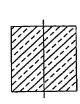
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

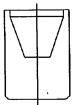
with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

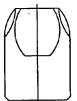
(54) Title: LEAD FREE MONOBLOC EXPANSION PROJECTILE AND MANUFACTURING PROCESS



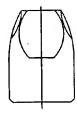












(57) Abstract: The present invention relates to a bullet made of a single solid piece of deformable metal, containing no lead or toxic material, easily deformable but without fragmentation in soft environment with a high rate of energy transfer, and a high level of solidity in hard targets, retaining most or its total initial weight while penetrating those targets. Said objects are achieved by constructing a solid monobloc bullet with a cavity on the longitudinal axis which is opened towards the fore end of the bullet. The method of construction encompasses a sequence of simple operations: cutting of a cylinder blank of soft material, forming a cavity centered on the longitudinal axis, and forming a ogival or conical form, with external pre-cuts to foster an homogenous deformation. The present invention applies to any handgun, rifle or shotgun ammunition; when used in smoothbores, the essential stability of the bullet is achieved by positioning the center of gravity ahead of the aerodynamic center.